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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, TANH Q	
ART UNIT	PAPER NUMBER
2182	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,769	FOSTER ET AL.	
	Examiner	Art Unit	
	Tanh Q. Nguyen	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2006 (RCE)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/01/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 14, 2006 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 32-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. Claim 32 recites "transmitting said specific signal structures to said USB devices in a predefined sequence" in lines 8-9. The specification provides support for such

limitation at various locations in a format similar to the recitations in the claim. However, there is no explanation or example supporting the specific signal structures being transmitted to the USB devices in a predefined sequence.

The specification discloses the specific signal structures to be the USB Start of Frame packet token sequences as defined in the USB specification, command sequences sent to the USB device, or data sequences sent to the USB device (page 10, lines 17-21). The cited section appears to only disclose a USB Start of Frame packet token sequence as a specific signal structure, a command sequence as another specific signal structure, or a data sequence as yet a different specific signal structure. The cited section discloses the specific signal structures to be sequences, but does not disclose the specific signal structures being transmitted to the USB devices in a predefined sequence. Furthermore, the specification does not define "a predefined sequence". It is therefore not clear what constitutes "a predefined sequence".

In addition, it is not clear whether "transmitting said specific signal structures to said USB devices" means "transmitting a first specific signal structure to a first USB device, then a second specific signal structure to a second USB device,..." where the first specific signal structure and the second specific signal structure are of the same type (e.g. the first specific signal structure is a USB Start of Frame packet token sequence and the second specific signal structure is also a USB Start of Frame packet token sequence,...), **or** "transmitting a first specific signal structure to a first USB device, then transmitting a second specific signal structure to a second USB device,...", where the first specific signal structure and the second specific signal structure are not

of the same type (e.g. the first specific signal structure is a USB Start of Frame packet token sequence and the second specific signal structure is a command sequence,...) **or** "transmitting a first plurality of specific signal structures to a first USB device, then a second plurality of specific signal structures to a second USB device,...",.

It appears that the specification supports "transmitting a first specific signal structure to a first USB device, then a second specific signal structure to a second USB device,..." where the first specific signal structure and the second specific signal structure are of the same type (e.g. the first specific signal structure is a USB Start of Frame packet token sequence and the second specific signal structure is also a USB Start of Frame packet token sequence,...).

6. Claim 32 recites "transmitting said specified signal structures to each of said USB devices in a predefined sequence" in lines 23-24. The specification provides support for such limitation at various locations in a format similar to the recitations in the claim. However, there is no explanation or example supporting the specified signal structures being transmitted to the USB devices in a predefined sequence.

The specification discloses the specified signal structures to be OUT tokens, IN tokens, ACK tokens,..., SOF tokens,..., programmable sequences bit patterns in the USB data packets (page 11, line 37-page 12, line 4). The cited section appears to only disclose a USB token as a specified signal structure, or a programmable sequence bit pattern as another specified signal structure. The cited section discloses the specified signal structures to be tokens or programmable sequences bit patterns, but does not disclose the specified signal structures being transmitted to each of the USB devices in

a predefined sequence. Furthermore, the specification does not define "a predefined sequence". It is therefore not clear what constitutes "a predefined sequence". It is also not clear what "programmable sequences bit patterns" means.

In addition, the limitation suggests "transmitting a plurality of tokens and/or programmable sequences to each of the USB devices". It appears that the specification only supports transmitting a specified signal structure to each of the USB devices, the specified signal structure being one of many different specified signal structures - rather than transmitting a plurality of specified signal structures to each of the USB devices (e.g. transmitting an IN token to a first USB device, then transmitting another IN token to the second USB device,...).

7. Claim 32 recites "generating second event triggering signals...corresponding to decoding of response signals from each of said USB devices" in lines 30-32. The limitation suggests decoding of a plurality of response signals from a first USB device, then decoding of another plurality of response signals from a second USB device, and so on. The specification appears to support decoding a response signal from a first USB device, then decoding another response from a second USB device, and so on.

8. Claims 32-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 32 recites "A method of synchronizing a local clock of each of a plurality of USB devices, including respective local clocks, connected to a common USB host via a USB tree so that the local clocks of the plurality of USB devices are in phase and at a

common frequency" in lines 1-4.

The recitation is ambiguous as it is not clear what applicant intends to claim by "A method of synchronizing a local clock of each of a plurality of USB devices, including respective local clocks".

The specification appears to support "synchronizing a plurality of local clocks of a plurality of USB devices, each local clock corresponding to each one of the plurality of USB devices, the plurality of USB devices being connected to a common USB host via a USB tree so that the plurality of local clocks of the plurality of USB devices are in phase and at a common frequency".

"locking the local clocks" in line 5 should then be replaced with "locking the plurality of local clocks" for consistency.

10. Claim 32 recites "generating or designating specific signal structures for transmission in USB data traffic" in lines 6-7. The recitation is ambiguous as it is not clear what "USB data traffic" represents. The specification appears to support "generating or designating specific signal structures for transmission to the plurality of USB devices".

"said USB devices" in line 8 should be replaced with "said plurality of USB devices" for consistency. Furthermore, it is not clear what "transmitting said specific signal structures to said USB devices" means (see item 5 above).

11. Claim 32 recites "monitoring USB signals local to said USB devices" in line 10 is ambiguous because it is not clear that the USB signals are local to all USB devices. The specification appears to support "monitoring local USB signal/signals at each one of

the plurality of USB devices".

12. Claim 32 recites "generating a local reference signal at each of said USB devices" in line 12. It is not clear how a local reference can be generated at each of said USB devices - as a local reference for a first USB device may not be the same as a local reference for a second USB device. The specification appears to support "generating a plurality of local reference signals, each local reference signal corresponding to each one of said plurality of USB devices".

13. Claim 32 recites "locking the frequency of said local clock signal at each of said USB devices to said local reference signal to a predetermined degree" in lines 14-15. There is insufficient antecedent basis for "the frequency", and there is insufficient antecedent basis for "said local clock signal". It is also not clear whether "the frequency" in line 14 is the same as "a common frequency" in line 4. The specification appears to support "locking a plurality of frequencies of the plurality of local clocks, each frequency corresponding to each one of the plurality of local clocks, and each frequency being locked to each corresponding one of the plurality local reference signals to a predetermined degree".

14. Claim 32 recites "determining the relative propagation time of signals from said USB host to each of said USB devices with respect to a reference USB device selected from said USB devices, comprising:" in lines 16-18. There is insufficient antecedent basis for "the relative propagation time". It is further not clear how one relative propagation time from the USB host to each of the USB devices can be determined, as a relative propagation time from a first USB device may not the same as a relative

propagation time from a second USB device. The specification appears to support "a plurality of relative propagation times, each relative propagation time corresponding to each one of the plurality of USB devices".

"said USB devices" in line 18 should be replaced with "said plurality of USB devices" for consistency.

"said USB devices" in line 20 should be replaced with "said plurality of USB devices" for consistency.

"said USB devices" in line 23 should be replaced with "said plurality of USB devices" for consistency.

15. Claim 32 recites "a predefined sequence" in line 24. It is not clear whether it is the same "predefined sequence" in line 9. If it is the same, then "a predefined sequence" should be replaced with "said predefined sequence", otherwise the predefined sequences should be differentiated (e.g. a first predefined sequence and a second predefined sequence).

16. Claim 32 recites "said USB data traffic" in line 25. It is not clear whether "said USB data traffic" refers to "USB data traffic" in lines 19-20, or "USB data traffic" in line 22. It appears that "USB data traffic" in line 22 also refers to "USB data traffic" in lines 19-20, and "USB data traffic" in line 22 should be replaced with "said USB data traffic" to avoid interpretation of two different USB data traffics.

"said USB devices" in lines 26-27 should be replaced with "said plurality of USB devices" for consistency.

"said USB devices" in lines 31-32 should be replaced with "said plurality of USB

devices" for consistency.

"said USB devices" in line 34 should be replaced with "said plurality of USB devices" for consistency.

17. Claim 32 recites "measuring respective time intervals between said first and second event triggering signals in said master USB device for each of said USB devices" in lines 33-34 is ambiguous. It is not clear how the time intervals are measured for each of the USB devices. The specification appears to support "measuring respective time intervals between the first and second event triggering signals for the plurality of USB devices, each time interval corresponding to each one of the plurality of the USB devices". Furthermore, the specification appears to support "measuring a time interval between a first event triggering signal corresponding to a particular USB device and a second event triggering signal corresponding to the particular USB device", rather than "measuring respective time intervals between said first and second event triggering signals in said master USB device for each of said USB devices".

18. Claim 32 recites "determining a propagation time from said master USB device to each of said USB devices from said respective time intervals" in lines 35-36 is ambiguous because the specification appears to support "determining a plurality of propagation times, each propagation time from the master USB device to each one of the plurality of USB devices being determined from a time interval corresponding to each one of the plurality of USB devices".

"said USB devices" in line 36 should be replaced with "said plurality of USB

devices" for consistency.

19. Claim 32 recites 'determining a relative propagation time for each of said USB devices other than said reference USB device with respect to said reference USB device by determining a difference in said propagation delay time between said reference USB device and each of said USB devices other than said reference USB device" in lines 37-40 is ambiguous because the specification appears to support "determining a plurality of propagation times, each propagation time corresponding to each one of the plurality of USB devices other than said reference USB device, each propagation time being determined with respect to said reference USB device by determining a difference between the propagation time of said reference USB device and the propagation time of each corresponding one of the plurality of USB devices other than the reference USB device". Lines 16-17 should also be amended to reflect determining a plurality of relative propagation time for each of the plurality of the USB devices other than the reference USB device.

"said USB devices" in line 37 should be replaced with "said plurality of USB devices" for consistency.

"said USB devices" in line 40 should be replaced with "said plurality of USB devices" for consistency.

20. Claim 32 recites "determining what if any temporal adjustment or phase offset is required for each of said local clocks to result in said plurality of local clocks across said USB tree being in phase" in lines 43-45 is ambiguous. It appears that applicant meant "determining **whether a** temporal adjustment or phase offset is required for each **local**

clock of said plurality of local clocks to result in said plurality of local clocks across said USB tree being in phase".

"said local clocks" in line 44 should be replaced with "said plurality of local clocks" for consistency.

21. Claim 32 recites "transmitting each respective temporal adjustment or phase offset from said USB host to the respective USB device of said USB devices" in lines 46-47 is ambiguous. The specification appears to support "for each local clock requiring a respective temporal adjustment or phase offset, transmitting the respective temporal adjustment or phase offset to each corresponding USB device of the plurality of USB devices".

"said USB devices" in line 47 should be replaced with "said plurality of USB devices" for consistency.

22. Claim 32 recites "adjusting the phase of said local clock on each of said USB devices according to said respective temporal adjustment or phase offset" in lines 48-49 is ambiguous. The specification appears to support "adjusting the phase of each local clock requiring a respective temporal adjustment or phase offset on the corresponding USB device according to the respective temporal adjustment or phase offset.

23. Claim 33 recites "wherein each of the local clocks of at least some of said USB devices are shifted in phase by a desired amount" in lines 1-3 is ambiguous. The specification appears to support "wherein at least some local clocks are shifted in phase by a desired amount".

24. Claim 34 recites "synchronizing a local clock of each of said USB devices

according to the method of claim 32" in lines 4-5. Such recitation should be replaced with "synchronizing a plurality of local clocks of the plurality of USB devices according to the method of claim 32" for consistency.

25. Claim 34 recites "said trigger command" in line 8. Such recitation should be replaced with "said predefined trigger command" for consistency.

"said USB devices" in line 9 should be replaced with "said plurality of USB devices" for consistency.

"said USB devices" in line 12, in both instances, should be replaced with "said plurality of USB devices" for consistency.

26. Claim 34 recites "to prepare said USB devices to each execute said trigger request" in line 12. The claim merely recites "transmitting a predetermined request signal...indicative of a trigger request" in lines 6-7. Nothing else is recited with respect to the trigger request. It is therefore not clear how each of the plurality of USB devices can execute the **same single** trigger request.

"said USB devices" in line 14 should be replaced with "said plurality of USB devices" for consistency.

"said processes" in line 15 should be replaced with "said one or more processes" for consistency.

"said trigger command signal" in lines 15-16 should be replaced with "said predetermined trigger command signal" for consistency.

"said trigger command signal" in line 17 should be replaced with "said predetermined trigger command signal" for consistency.

"said trigger command signal" in line 19 should be replaced with "said predetermined trigger command signal" for consistency.

"said USB devices" in line 19 should be replaced with "said plurality of USB devices" for consistency.

Claim 34 recites "decoding said trigger command with each of said USB devices" in line 19. It is not clear how the **same single** trigger command is decoded with each of a plurality of USB devices.

Claim 34 recites "configuring said USB devices to execute said processes" in line 20. It is not clear whether each USB device executes multiple processes, or the USB devices together execute the processes.

"said USB devices" in line 20 should be replaced with "said plurality of USB devices" for consistency.

"said processes" in line 20 should be replaced with "said one or more processes" for consistency.

"said USB devices" in line 21 should be replaced with "said plurality of USB devices" for consistency.

"said trigger command signal" in line 22 should be replaced with "said predetermined trigger command signal" for consistency.

27. Claim 34 recites "whereby one or more processes within said USB devices can be initiated or stopped" in lines 21-22. It appears that "one or more processes" refers to the same "one or more processes" in line 2. If so, "one or more processes" should be replaced with "said one or more processes" for consistency. If not, then the "one or

more processes" in line 21 needs to be differentiated from the "one or more processes" in line 2.

28. "the USB devices" in line 3 and in lines 3-4 of claim 35 should be replaced with "the plurality of USB devices" for consistency.

"the USB devices" in line 3 and in lines 3-4 of claim 37 should be replaced with "the plurality of USB devices" for consistency.

"said USB devices" in lines 1-2 and in line 4 of claim 38 should be replaced with "said plurality of USB devices" for consistency.

29. Claim 39 recites "programmable sequences bit patterns" in lines 3-4. Claim 40 recites "programmable sequences bit patterns" in lines 3-4. It is not clear what the recitation represents.

30. Claim 39 recites "the USB data packets" in line 4. Claim 40 recites "the USB data packets" in line 4. There is insufficient antecedent basis for the limitation in the respective claims.

31. "said trigger command" in lines 1-2 of claim 41 should be replaced with "said predefined trigger command" for consistency.

32. The claims appear to recite features associated only with an individual USB device in the context of a plurality of USB devices, and vice versa. Applicant needs to properly associate the features to clearly define the invention (i.e. features for an individual USB device should only be associated with the individual USB device, and features for multiple USB devices should only be associated with multiple USB devices). No prior art rejection was made because the claims, as recited, do not enable the

examiner to interpret the claims without requiring the examiner to make a great deal of speculation.

Double Patenting

33. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

34. Claim 32 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 35-37 of copending Application No. 11/271,799. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 35-37 of the copending application are directed to an apparatus for practicing the method recited in claim 32.

In particular, an apparatus for locking of the local clocks of claim 37 of the copending application corresponds to 32(a) of the instant application; an apparatus for

determining a relative propagation delay of claim 37 (with claim 37 being dependent of claim 36 which depends on claim 35) of the copending application corresponds correspond to 32(b) of the instant application; a timer for determining the temporal adjustment and phase offset in claim 37 of the copending application corresponds to 32(c) of the instant application; and the apparatus being adapted to transmit the temporal adjustment and phase offset, and providing phase adjustment of the local clock of claim 37 of the copending application corresponds to 32(d)-32(e) of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Note that the double patenting rejection may alternatively be overcome by canceling claim 37 of the copending application, and adding a new claim in the instant application as an apparatus claim that corresponds to the method claim of claim 32.

Response to Arguments

35. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TANH Q NGUYEN
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

January 26, 2007

TQN
January 26, 2007